Applicants: Naldini et al. Atty. Dkt. No. : 1130-PCT-US

USSN : 10/554,181 Art Unit : 1636

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## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application:

- 1. (Currently Amended) A bidirectional promoter for expression of at least two coding sequences in opposite direction in animal cells comprising 5' end to 3' end:
  - a) a first minimal promoter sequence of cytomegalovirus (CMV) or mouse mammary tumor virus (MMTV) genomes;
  - b) [a] <u>an eukaryotic</u> promoter sequence of an animal gene comprising an enhancer region and a second minimal promoter sequence;

the two promoter sequences driving a coordinate transcription of said coding sequences in the opposite orientation.

- 2. (Canceled)
- 3. (Previously Presented) The bidirectional promoter according to claim 1 wherein the animal gene is an ubiquitously expressed gene comprising the phosphoglycerate kinase or the ubiquitin gene.
- 4. (Previously Presented) A bidirectional expression cassette essentially comprising the bidirectional promoter according to claim 1, convenient insertion sites positioned downstream to each promoter, and polyadenylation sites positioned downstream to each insertion site.
- 5. (Original) The bidirectional expression cassette according to claim 4 further comprising at least one post-transcriptional regulatory element positioned upstream to one or each polyadenylation site.

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6. (Previously Presented) The bidirectional expression cassette according to claim 4 further comprising at least one internal ribosome entry site (IRES) sequence to express three or more genes.

- 7. (Previously Presented) An expression construct containing the bidirectional promoter according to claim 1.
- 8. (Previously Presented) An expression construct containing the bidirectional expression cassette according to claim 4.
- 9. (Previously Presented) A gene transfer expression vector containing the expression construct according to claim 7 further comprising lentiviral or retroviral sequences.
- 10. (Previously Presented) A method for the delivery and expression of multiple genes in animal cells comprising the gene transfer expression vector according to claim 9.
- 11. (Previously Presented) The method according to claim 10 wherein animal cells are tissue animal cells ex vivo.
- 12. (Previously Presented) The method according to claim 11 wherein the tissue animal cells are brain neurons.
- 13. (Previously Presented) A method for the coordinate expression of two exogeneous coding sequences in an animal cell comprising the following steps:
  - a) cloning said coding sequences into the gene transfer expression vector according to claim 9, each coding sequence under the control of one of the two promoters of the bidirectional promoter;
  - b) transforming animal cells by means of said vectors; and

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- c) allowing the expression of the vector.
- 14. (Previously Presented) The method for the coordinate expression of two exogeneous coding sequences according to claim 13 wherein the animal cell is an human cell.
- 15. (Previously Presented) The method for the coordinate expression of two exogeneous coding sequences according to claim 14 wherein the human cell is a retransplantable human cell.
- 16. (Previously Presented) The method for the coordinate expression of two exogeneous coding sequences according to claim 15 wherein the retransplantable human cell is an hematopoietic cell.
- 17. (Previously Presented) A method for generating a transgenic non human organism comprising the step of transforming appropriate cells with an expression construct containing the bidirectional cassette according to claim 7.
- 18. (Previously Presented) A method for generating a transgenic non human organism comprising the step of transforming appropriate cells by means of the gene transfer expression vector according to claim 9.